

GUJARAT TECHNOLOGICAL UNIVERSITY**BE – SEMESTER- VII EXAMINATION-SUMMER 2023****Subject Code: 2170714****Date: 19/06/2023****Subject Name: Distributed DBMS****Time: 10:30 AM TO 01:00 PM****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Simple and non-programmable scientific calculators are allowed.

		MARKS
Q.1	(a) Explain the following in the context of Relational algebra: 1. Selection 2. Union 3. Projection	03
	(b) What do you mean by Normalization? Explain normalization up to 3NF.	04
	(c) Enlist Promises of DDBSs and Explain Layers of Transparency.	07
Q.2	(a) Compare Global versus Local Data Dictionaries.	03
	(b) Discuss Correctness Rules of Fragmentation.	04
	(c) Explain Client/Server reference architecture for DDBSs.	07
	OR	
	(c) Elaborate Peer to Peer Distributed architecture.	07
Q.3	(a) Define Lock Granting.	03
	(b) What do you mean by view management? How view management is to be performed in centralized DBMS.	04
	(c) Explain Top-Down Design Process for Distributed Database.	07
	OR	
Q.3	(a) Define Autonomy, Distribution, and Heterogeneity.	03
	(b) Discuss Discretionary Access Control.	04
	(c) Explain the Bond Energy Algorithm with respect to vertical fragmentation.	07
Q.4	(a) Discuss the types of Transactions.	03
	(b) Describe distributed INGRES query optimization algorithm.	04
	(c) Discuss query optimization in brief.	07
	OR	
Q.4	(a) Explain the properties of Transactions.	03
	(b) Explain join ordering for query optimization	04
	(c) Explain Layers of Distributed Query Processing.	07
Q.5	(a) Explain terms: Cascading Abort, Dirty Read, and, Conflict Equivalence.	03
	(b) Explain the classification of the concurrency control algorithm in a distributed database.	04
	(c) Discuss centralized two-phase locking protocol.	07
	OR	
Q.5	(a) Discuss the wait-die deadlock avoidance algorithm for a distributed system.	03
	(b) Define Reliability and Availability.	04
	(c) Explain the two-phase commit protocol.	07
